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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,316	03/01/2004	Richard A. Haase	CV-49	1953

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RICHARD A. HAASE (INVENTOR)
4402 RINGROSE DRIVE
MISSOURI CITY, TX 77459

EXAMINER	
NGUYEN, HOANG M	
ART UNIT	**PAPER NUMBER**
3748	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,316	HAASE, RICHARD A.	
	Examiner	Art Unit	
	Hoang M. Nguyen	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *216-220,222-229,231,232,235,237-253 and 258-350* is/are pending in the application.

4a) Of the above claim(s) *261-341 and 343-349* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *216-220,222-229,231,232,235,237-253,258-260,342 and 350* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/16/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant's amendment dated April 16, 2007, has been fully considered.

First of all, for the purpose of expediting the examining process, the Examiner would like to suggest the only independent claim 216 be amended to further include a combination of 1) the electrolysis chamber in claim 228, and 2) the hydrogen gel with frozen water crystals in claim 242 to put this application in condition for allowance. Right now, this application is still rejected because of the following reasons.

The newly added limitation in claim 216 "air separation unit with the energy powers at least a portion of the air separation" is taught in US 5388395 (Scharpf et al). Scharpf et al discloses an air separation unit 80 being powered partly by the steam (column 4, lines 20-22), which is a part of the combustion power. Therefore, a 103 rejection has been made to rejection claim 216 instead of the 102 rejections in the previous Office Action.

Regarding claim 242, Applicant argued US 2406605 (Hurd) does not disclose the mixture of hydrogen with frozen water crystal. The Examiner disagrees. Example 4 mentions about using dry-ice condenser bonded to hydrogen. That inherently forms the hydrogen gel as claimed.

Regarding the US 6212876, please note the only teaching from this reference is the concept of using combustion engine to drive a rocket. The hydrogen fuel is already taught in the primary references (Tindell and Hughes).

Regarding the rejection of claim 223, Applicant argued the combination is not valid because Scharpf et al discloses the nitrogen air separation unit that is contracted with Applicant's oxygen cryogenic air separation unit. The Examiner disagrees because the air separation unit in Scharpf et al separates both nitrogen in line 86 and oxygen in line 84. Because both oxygen and nitrogen are formed by the air separation unit, the teaching of Scharpf et al is relevant to the claimed invention.

Regarding other 103 rejections including Gode, Kang et al, Weidig, Erickson, Thodarson, Applicant argued the modified features from these references do not meet the subject matter of independent claim 216. The Examiner would like to point out that the teachings of these references are used only to reject the limitations of the dependent claims. The independent claims are rejected by the primary references. Also, because all references are from the same field of endeavor, it would have been obvious to modify one reference in view of the other. For the 103 rejections, Applicant should not attack the references individually but must consider the combination as a whole.

Again, Applicant is suggested to add 1) the electrolysis chamber and 2) the hydrogen gel with frozen water crystals in independent claim 216 to put this application in condition for allowance.

For now, this application is rejected as follows.

Claims 216-220, 222, 223, 224, 238-240, 243, 248-253, 258, 342, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of U.S. 5388395 (Scharpf et al).

Tindell discloses a solar energy system comprising an electrolysis chamber 13 for forming hydrogen being stored in an hydrogen tank 22, oxygen being stored in an oxygen tank 21, a combustion chamber 33 for burning said hydrogen and oxygen, water input nozzle 31 for injecting water into the combustion chamber, said combustion chamber is then acting as a steam generator to generate steam to drive a steam turbine 47 to generate electricity through a generator 48. Tindell does not teach the air separation unit being powered partly by the combustion energy. Scharpf et al discloses an air separation unit 80 being powered partly by the steam (column 4, lines 20-22), which is a part of the combustion power. It would have been obvious to provide an air separation unit in Tindell as taught by Scharpf et al for the purpose of more effectively forming oxygen for the combustion process. Regarding claim 223, Tindell does not disclose the use of nitrogen. Scharpf et al is relied upon to disclose it's well known to use nitrogen in the inlet of the combustion chamber for the purpose of improving the

cooling function of the input fluid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to inject nitrogen in Tindell as taught by Scharpf et al for the purpose of improving the cooling function of the input fluid.

Claims 216-220, 222, 223, 224, 228-229, 238-240, 243, 248-253, 258, 342, are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 3459953 (Hughes et al) in view of Scharpf et al.

Hughes et al discloses a solar energy system comprising an electrolysis chamber 16 for forming hydrogen being stored in an hydrogen tank 20, oxygen being stored in an oxygen tank 22, a combustion chamber 24 for burning said hydrogen and oxygen, water input nozzle 48 for injecting water into the combustion chamber, said combustion chamber is then acting as a steam generator to generate steam to drive a steam turbine 32 to generate electricity through a generator 36. Note the electrical input 10 can be from any sources (column 2, lines 15-16), so it's clear that the electricity from the generator 36 can be used too. Hughes et al does not teach the air separation unit being powered partly by the combustion energy. Scharpf et al discloses an air separation unit 80 being powered partly by the steam (column 4, lines 20-22), which is a part of the combustion power. It would have been obvious to provide an air separation unit in Hughes et al as taught by Scharpf et al for the purpose of more effectively forming oxygen for the combustion process. Regarding claim 223, Hughes et al does not disclose the use of nitrogen. Scharpf et al is relied upon to disclose it's well known to

use nitrogen in the inlet of the combustion chamber for the purpose of improving the cooling function of the input fluid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to inject nitrogen in Hughes et al as taught by Scharpf et al for the purpose of improving the cooling function of the input fluid.

Claims 225-227 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and U.S. 5899072 (Gode). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the use of corrosion to form hydrogen. Gode is relied upon to disclose it's well known to use corrosion to form hydrogen (column 1, lines 36-49). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form hydrogen by corrosion in Tindell as taught by Gode for the purpose of generating more hydrogen if needed.

Claims 231, 235 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and U.S. 5516359 (Kang et al). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the use of air separation unit with membrane. Kang et al is relied upon to disclose it's well known to use air separation unit 107 with membrane 108 for separating air. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use an air separation unit with membrane in

Tindell as taught by Kang et al for the purpose of separating air to form more important components if needed.

Claim 237 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and U.S. 4440545 (Weidig). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the use of corrosion inhibitor. Weidig is relied upon to disclose it's well known to use corrosion inhibitor in a combustion chamber. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use corrosion inhibitor in Tindell as taught by Weidig for the purpose of inhibiting corrosion in the combustion chamber.

Claim 241 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and U.S. 3975913 (Erickson). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the use of fuel cell. Erickson is relied upon to disclose it's well known to use fuel cell 1 to work in combination with an electrolysis chamber. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use fuel cell in Tindell as taught by Erickson for the purpose of generating the appropriate amount of hydrogen and oxygen.

Claim 242 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and US 2406605 (Hurd et al). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the use of gel storage. US 2406605 (Hurd et al) discloses the concept of converting hydrogen into hydrogen gel by treating the hydrogen in the dry condenser, note example 4 in column 3. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use gel storage in Tindell as taught by Hurd et al for the purpose of ease of storing hydrogen.

Claims 259-260, 350, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and US 6212876 (Gregory et al). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but does not disclose the jet propulsion rocket. US 6212876 (Gregory et al) teaches a rocket propulsion engine using combustion engine. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use jet propulsion rocket in Tindell as taught by Gregory et al for the purpose of driving rocket if needed (note it's well known to use combustion engine such as gas engine to produce thrust in aircraft/rocket design).

Claims 244-247 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4841731 (Tindell) in view of Scharpf and U.S. 6698183 (Thordarson). Tindell as modified by Scharpf discloses all the claimed subject matter as set forth above, but

does not disclose the use of flywheel and transmission. Thordarson is relied upon to disclose it's well known to use flywheel 176 and transmission 178 for transmitting power from a combustion chamber/engine 22. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use flywheel and transmission in Tindell as taught by Thordarson for the purpose of transmitting power output of the combustion engine.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Nguyen whose telephone number is (571) 272-4861. The examiner can normally be reached on Tuesday--Friday from 12:30 AM to 10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

05/23/07

HOANG NGUYEN
PRIMARY EXAMINER
ART UNIT 3748

Hoang Minh Nguyen
5/23/2007